Foreign Agriculture

November 28, 1977

Foreign
Agricultural
Service
U. S. DEPARTMENT
OF AGRICULTURE

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Showing a prize Hereford bull in Uruguay.

200-Mile Fishing Zones Seen Boosting Japan's Imports of Meat, Feed

By William T. Coyle and Alan Hemphill

Fish is not highly important in the American diet. But to the Japanese, fish and fish products are vital, accounting for half the daily animal protein intake and some 15 percent of household food expenditures. So it is not surprising that Japan has been following closely the imposition of 200-mile fishing zones by many governments and the resulting implications for its food supply.

Historically a fish-loving nation, with fleets that range the oceans for this important protein source, Japan now is finding its fishing curtailed as nation after nation imposes 200-mile coastal limits.

So far, more than 50 countries have adopted 200-mile limits in place of the 12-mile zones that once prevailed, restricting fishing in waters from which more than a third of Japan's total fish catch has been taken. As a result, important questions have been raised about how Japan can compensate for the probable loss of food and feedstuff supplies.

Some sources feel that Japan will be able to make up any loss resulting from these changes in a relatively short time through more intensive fishing in its own waters and on the open sea. Others see the country becoming more dependent on imports of fish and other meats, as well as on grains and oilseed meal to fuel livestock industry expansion and to compensate for reduced fishmeal production.

The latter possibility seems most likely at least for the short term, since time will be required for Japan to boost its fish catch. During the interim, the country might turn to the United States—by far its largest supplier of agricultural products—for more red meat, poultry, variety meats, soybeans and products, and feedgrains, as well as to other sources for fish.

In the animal feed sector, scarcities of domestically produced fishmeal already are sparking greater imports of this and other protein feeds. For instance, Japanese net imports of fishmeal in January-June 1977 rose to 74,000 metric tons from less than 1,000 in the 1976 period, while purchases of soybeans and meal, meal equivalent, were up 22 percent to 1.66 million tons. Of the January-June 1977 total, 1.63 million tons of soybeans and meal came from the United States—or 23 percent more than in the 1976 period.

The Andean countries of Peru, Ecuador, and Chile were among the first nations to extend their territorial waters. Dependent as their economies are upon coastal fisheries—among the world's richest sources of anchovies and tuna—these nations had for years claimed the 200-mile limit.

More recently, the United States, the USSR, North Korea, and nearly 50 other nations have moved to enlarge their control over coastal waters, with resulting sharp restrictions for nations that had previously capitalized on the generally free access to coastal fisheries.

For Japan, these developments have been especially onerous, given the ascendancy of the country's fishing industry and the long-standing importance of fish in the Japanese diet. The Japanese fishing industry is the world's largest in terms of value, variety of fish, and areas of operation and has accounted for about 15 percent (10.5-11 million tons) of the approximately 70 million tons caught worldwide in recent years.

Resulting consumption of fish and other seafood as food alone amounts to 36.4 kilograms per capita—six times the U.S. consumption level. In addition, the country uses large quantities of fish in feed and fertilizer and ranks as both an importer and exporter of fish and fish products.

During 1975, prior to the

Japan's Daily Per Capita Supply of Proteins, JFY 1975 (April-March)

Item	Quantity	Share
	Grams	*Percent* [1]
Animal sources:		
Beef	1.3	1.6
Pork	2.5	3.2
Chicken	3.5	4.4
Whale	.6	.7
Eggs	4.9	6.2
Dairy products	4.2	5.3
Fish, shell fish	17.1	21.7
Total	34.1	43.3
Other sources:		
Cereals	24.7	31.3
Potatoes [2]	.8	1.0
Pulses	7.6	9.6
Miso (bean paste)	2.3	2.9
Vegetables	4.4	5.6
Fruits	.9	1.1
Seaweeds	.7	.8
Other	3.3	4.2
Total	44.7	56.7
Grand total	78.8	100.0

[1] May not add due to rounding.
[2] Includes sweet potatoes.

Source: Statistical Yearbook of Ministry of Agriculture and Forestry, Japan, 1975-76

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Above, scene near the Tokyo harbor; the Japanese depend on the sea for about 50 percent of their animal protein intake. Far left, early morning buyers at the largest fish market in the world (Tsukiji) inspect frozen tuna before auction. Left, fish are moved from dockside to wholesale outlets at the Tokyo fish market. Below, daily supplies of fish are trucked to restaurants and hotels in the Tokyo area.

proliferation of 200-mile zones, around 36 percent of Japan's total fish catch was taken within 200 miles of other countries. Most significant were large catches (mostly Alaskan pollack) in the northern Pacific within the 200-mile limits of the Soviet Union and the United States. These areas together accounted for 27 percent of the total Japanese catch.

Of lesser importance have been fisheries off the coasts of Canada, North and South Korea, Australia, New Zealand, and the People's Republic of China (PRC). Together, these areas accounted for another 5 percent of the 1975 Japanese catch.

Most actions taken so far to extend control over larger areas of coastal water will not completely eliminate foreign access. Instead, they will limit it through the administration of quotas, licensing procedures, and access fees that most assuredly make fishing more costly.

The United States, for example, established fishing quotas as of March 1, 1977, for different countries by species, reducing Japan's 1977 quota 11 percent below that country's 1976 catch. The United States also levies an access fee on the gross tonnage of the vessel and a tax on the value of the catch.

The USSR has made similar reductions in Japan's quota, using 6-month agreements as means of control. For June-December 1977, Japan's quota was reduced 36 percent below the catch in that same period of 1975. Assuming no alterations of subsequent agreements, these changes would amount to a yearly reduction of around 500,000 tons, or the equivalent of nearly 5 percent of Japan's 1975 fish catch.

In addition, the USSR has banned Japanese research vessels from the 200-mile zone, thereby forcing fishing boats to search for cuttle fish by trial and error. And it has levied heavy fines on fishing boats that allegedly fail to observe orders of Soviet patrols or make incomplete entries in fishing records. As of August 31, 1977, a total of 34 fines had been issued for the equivalent of $130,000.

Australia and New Zealand have not officially established coastal limits, although they are planning to do so in the near future, with the degree of access afforded possibly hinging on their access to the Japanese market. Both Australia and New Zealand have been unsuccessful in expanding sales of several agricultural products, such as beef and dairy products, to Japan, owing in part to Japanese import quotas.

The two countries also are concerned about increased fishing within 200 miles of their coasts, by foreign fishing fleets displaced from other fishing grounds affected by 200-mile limits.

Japan so far has not faced any restrictions on fishing in South Korean waters.

North Korea has given Japan free access between the 50-mile military sea boundary it recently imposed and the 200-mile economic zone. Because of the 50-mile limitation, however, Japanese fishing in North Korean waters is expected to be reduced 25 percent below the 81,000 tons caught in 1975.

Japan has responded to the 200-mile trend in a number of ways so as to compensate for potential losses and assure a stable supply in the future.

One response has been to establish its own 200-mile zone and within that area place limitations on other countries. These restrictions especially affect the Soviet Union, whose catch—recently averaging 600,000 tons a year—is to be reduced 30 percent.

Additionally, and perhaps foremost, is an officially endorsed program to increase productivity in the domestic 200-mile zone.

The Fishery Agency of the Japanese Ministry of Agriculture and Forestry (MAF) has earmarked 75 billion yen of a 200-billion-yen budget ($755 million) to set up artificial fish habitats in coastal areas. The number of fish farming centers nurturing several different species of fish will be increased from 10 currently to 17 by 1980,

Based on reports from Special Projects Division, FAS, and other sources.

Varied Concerns Sparked Trend to 200-Mile Limits

Some marine specialists see the oceans as the last great frontier for food production—potentially a source for increasing shares of world animal protein needs, compared with only about a third currently. Yet realizing this potential has been complicated by overfishing, pollution, and other problems that have begun to threaten supplies of traditional food fish and by consumers' slowness to accept nontraditional seafood.

At the same time, coastal nations have become increasingly interested in retaining for themselves offshore rights to minerals, petroleum, and natural gas, as well as the fish and seafood.

In light of these conditions, the United Nations in the early 1970's convened a special Law of the Sea Conference to develop a treaty that would rewrite the existing Law of the Sea, including government jurisdictions over waters adjacent to coasts.

The first negotiating session of the Conference was held in Caracas, Venezuela, in 1974. Subsequent meetings have been held regularly, including two in New York during 1976 and one in New York this year. Another meeting is planned for next spring in Geneva, Switzerland.

Progress toward developing a new Law of the Sea Treaty has been slow, however, and some sources feel that such a broad forum—encompassing all the major maritime nations of the world—will never reach agreement on a treaty, much less accomplish the necessary ratification.

Still, a number of individual nations already have claimed 200-mile limits and acted accordingly to control fishing and other activities within these waters.

Several countries, in fact, have aggressively defended their claims to enlarged coastal zones. Iceland in the early 1970's took severe measures to drive British, German, and other ships from its waters. And Ecuador had periodically seized U.S. tuna boats off its shores.

Most prominent maritime nations—including the United States—at first re-

and the capacity of salmon incubation facilities, from 1.4 billion to 2.0 billion eggs.

Some argue that this ambitious Government program is doomed to failure because the sea resources around Japan are limited and that increased production through fish farming will yield only modest results. The effects of industrial waste and sewage on coastal fish culture have recently dramatized these limitations.

For instance, over 1 million fish at three fish farms along the inland sea of Japan died from the effects of a "red tide" in August 1977, with estimated damage of almost $5 million. Such a phenomenon occurs when industrial waste and sewage cause the mass breeding of red plankton. Resulting oxygen depletion often causes high mortality of fish.

Another idea receiving attention is an effort to increase efficiency in fish processing and thus avoid undue waste of valuable food material. A great deal of protein, for example, is washed away in the manufacture of *kamaboko*, a fish paste product. At present, the average protein level of fresh and processed fish is 9.3 percent. If that level could be raised, less fish would be needed to yield the same amount of protein.

Japan also might opt to expand imports of fish and fish products. Until 1970, the country was a net exporter of fish, but it became a net importer in the 1970's as the total catch leveled off at 10 million tons while demand continued to grow. De-

Japan's Fish Catch, 1974 and 1975

Item	1974		1975	
	Quantity	Share	Quantity	Share
Within foreign 200-mile zones:	*1,000 M.T.*	*Percent*	*1,000 M.T.*	*Percent*
United States	1,585	14.7	1,410	13.4
Soviet Union	1,630	15.1	1,396	13.2
Canada	26	.2	21	.2
PRC	180	1.9	152	1.4
Korea (North & South)	209	1.9	241	2.3
Australia	18	.2	12	.1
New Zealand	78	.7	80	.8
Other	530	4.9	432	4.1
Total	4,256	39.4	3,744	35.5
Within Japanese 200-mile zone: [1]	5,236	48.4	5,503	52.2
High seas and fresh water:	1,316	12.2	1,298	12.3
Total Japanese catch:	10,808	100.0	10,545	100.0
Total world catch:	69,845		69,732	

[1] The area around the four islands known as the Northern Territories is under dispute by the Soviet Union and Japan. In 1974 and 1975, 221,000 and 300,000 tons, respectively, were taken from within the 200-mile zone of these islands.

sisted any encroachment upon the open seas policy. The oceans, covering 71 percent of the world's surface, have been considered open to all comers throughout recorded history, serving as transportation and communication media, as well as sources of food.

But U.S., British, and Canadian fishermen made strong cases about the economic plight of their industries and the depletion of traditional fisheries, thus contributing to their countries' eventual implementation of 200-mile limits for fisheries jurisdiction.

In the United States, the State Department has concluded fishery agreements with a number of countries, including Japan, the USSR, Mexico, the European Community, South Korea, Taiwan, Spain, Poland, Bulgaria, the German Democratic Republic, and Cuba. All of these agreements came into force on March 1, 1977, with implementation of the Fishing Conservation Zone Act. These treaties acknowledge the exclusive fishery management authority of the United States in a zone out to 200 miles and provide for the enforcement and implementation by the United States of all features of the Act.

The United States retains the right to determine who shall fish off its shores, and it does not expect to allocate rights to any country without a record of fishing.

Worldwide, the immediate effects of the trend toward 200-mile limits will be some cutback in the catch in overfished grounds controlled by the United States, Canada, the USSR, and others.

To a minor extent, the ever-growing pond fish endeavors will help offset declines in deep sea catches of conventional fish. Increased catch of less desirable ocean life such as squid also is likely.

International trade in fish may suffer, with the most severe impact on nations new to this trade. As the fish supply is curtailed, prices are expected to rise materially, and other protein sources, to increase their share of the market.

So far, over 50 nations have adopted the 200-mile limits. Should this limit be universally applied, 90 percent of the world fish catch would come under national controls, since fish are most abundant along the continental shelf.

The reason for this phenomenon is the food supply. Some fish feed on diatoms; others, on weaker fish. But virtually all are dependent on the abundance of sealife close to shore. Fish populations are particularly dense, for example, off the Peruvian Coast because upwelling brings minerals from the bottom to ensure an unusually large supply of diatoms.

Realization of the limitations of oceanic resources, meantime, continues to grow, reflecting sharp increases in the fish catch during the past half century and accompanying environmental and supply problems.

Accelerating need for protein food, together with rapid technological advances, has brought greater progress in fishing methods during the last 50 years than that made in the previous 3,000 years. With this increased sophistication has come larger vessels and further traveling in search of fish.

Consequent dramatic gains in per-vessel output boosted the world fish catch from only 14.9 million metric tons (excluding whales and seals) in 1945 to 69.7 million in 1975, of which 48.7 million were consumed directly as food.

Accounting for the bulk of the production were 13 nations, in order—Peru, Japan, the People's Republic of China, the USSR, Norway, the United States (with a 1976 catch of 2.43 million tons worth a record $1.3

Japan Fishing

spite this increasing demand and limitations on fish supplies, Japan still restricts the import of five different categories of fish and marine products and imposes a tariff quota on imports of fishmeal.

Recently, in an effort to lessen world criticism about its growing trade surplus, Japan announced an import promotion program aimed at reducing that surplus. Among items under study to be liberalized are imports of cuttle fish and seaweed.

Of course, the economic tradeoff between imports and jobs also will be weighed politically. Public officials are extremely sensitive about jeopardizing the livelihood of 500,000 fishermen.

Other measures aimed at assuring stable fish supplies are the promotion of lower grade fish, such as sardines and krill, for food; development of new fisheries off the coast of Argentina and South Africa; and emphasis on joint overseas ventures. Already, Japan has invested about $80 million in overseas ventures to catch and process fish, with 28 such ventures in the United States.

Japan also faces the strong prospect of changes in domestic meat consumption patterns, with consumers turning to other protein sources as substitutes for increasingly costly fish.

Between January and July 1977, the Japanese consumer price index for fresh fish rose 8.8 percent, compared with much more moderate gains of 1.15 percent of all foodstuffs and 2 percent for meats. Additionally, per capita consumption of fish has begun to level off after having followed an upward trend in past years.

One agricultural economist with the MAF speculates that a shift from fresh fish to either poultry or pork may be in the offing as well as some substitution of beef for higher grades of fish such as tuna.

Prices likewise have been rising sharply for processed fish products made from lower grade fish. Among these species are Alaskan pollack, which accounted for 72 percent of all fish caught by the Japanese in U.S. and Soviet 200-mile zones during 1975. Reflecting reduced availabilities of Alaskan pollack, the price of pollack paste has risen by almost 50 percent in the last year. Concurrently, Japanese consumers have begun to replace costly fish paste products with meat sausage, pressed ham, and eggs, according to a recent Government survey.

With demand for other meats likely to increase, the Japanese can either expand imports of meats and/or expand domestic livestock production, which is almost completely dependent on imported feedstuffs.

Any gain in Japanese meat imports would probably enhance shipments from the United States, in view of this country's strong position in Japan's poultry and pork import trade. Currently, Japan imports some 35,000 tons of poultry a year, with about 60 percent coming from the United States—a percentage share that probably would be retained if imports rose.

Pork imports fluctuate from 150,000 to 200,000 tons a year, with the share from the United States generally going up as imports increase. If larger imports were made on a continuing basis, the United States could expect to get 50 percent or more of the increase.

Beef imports would grow if Japanese Government quotas on beef were increased since Japanese production cannot expand to any great degree. Should this market widen, the U.S. share of imported beef would probably increase from the 10-15 percent currently held, since the United States supplies a higher percentage of beef sold directly to consumers, as opposed to manufacturing beef that is supplied largely by Oceania.

Japan could also meet increased demand for other meats by expanding its own production. Currently, Japan produces about 1.1 million tons of pork and 886,000

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200-Mile Zones

billion), Spain, India, Canada, Indonesia, Denmark, Chile, the United Kingdom.

Concurrent with this growth in fish catches, pollution problems have begun to affect the oceans. Mercury, lead, and pesticide chemicals have been found at alarming levels in some fish. And oil spills—an increasingly common problem—threaten to become more frequent as nations move to tap underseas petroleum and gas reserves.

These changed circumstances have disproved the onetime assumption that fish constitute a relatively unlimited natural resource, reproducing as fast as they are caught. Today, the feeling is that fish supplies not only are limited, but, in some cases, in jeopardy.

Still, attempts to define accurately the maximum catch possible without depleting future supplies have met with little success so far—with estimates varying from 55 million tons a year to 2 billion.

The UN Food and Agriculture Organization estimates 100 million tons a year as the maximum sustainable yield of traditional food fish. But if squid is included, the potential jumps considerably, while the inclusion of smaller sealife, such as krill and lantern fish, would add tonnages that are many times the present world fish catch.

Tapping this vast potential, of course, hinges on gaining consumer acceptance of nontraditional seafoods. Currently, of the 30,000 species of fish, two major classes—herring-anchovy and cod-haddock—account for two-fifths of world consumption of fish for food.

About 75 percent of the catch also is taken in waters of the Northern Hemisphere, whereas shifts to nontraditional seafood could open up fisheries in other parts of the world, including the Antarctic, where krill are found.

Given the worldwide importance of these products of the oceans, outcomes of the Law of the Sea Conference, the unilateral moves to implement 200-mile limits, and efforts to develop fish and underwater mineral resources are being watched closely.

Food uses alone are highly important to several countries. South Korea, for example, gets three-quarters of its animal protein food from fish; Japan, over half, and Portugal, almost one half. (In the United States, on the other hand, fish provide only 6 kilograms per capita per year, against 79.4 for red meat and 23 for poultry.)

In addition to fresh and processed foods, fish products furnish oils, meal, leather, fertilizer, glue, and isinglass. (About 28 percent of the catch goes for meal and oil; 30 percent is marketed fresh; 12 percent, cured; 18 percent, frozen; and 10 percent, canned. □

EC Enlargement, Tariff Affect U.S. Leaf Exports

Exports of U.S. tobacco to the United Kingdom, Ireland, and Denmark have fallen dramatically since 1973, the year these countries joined the European Community and later alined their tobacco policies with those of the EC.

A number of factors are influencing the sharp drop of U.S. tobacco exports to these countries—and the decline in the U.S. market shares there. Important among these are adoption by these countries of the EC's Common External Tariff (CXT) on tobacco leaf and product imports, the steadily rising price of U.S. tobacco, and the availability of tobacco from other sources at more competitive prices.

The CXT currently is raising the differential in duties paid on U.S. leaf relative to those paid by competitors. Increasingly larger proportions of EC imports of U.S. tobacco are falling in a higher duty bracket while most low-cost competitive leaf continues in a lower tariff bracket.

If combined with the continued expansion of the Generalized System of Preferences (GSP) quotas, the EC duty structure will widen the gap between relative duties in the foreseeable future and should cause a continued decline in the attractiveness of U.S. tobacco.

Based on an article prepared by the Tobacco Division, Foreign Commodity Analysis, Foreign Agricultural Service.

The United Kingdom, Ireland, and Denmark became full EC members on January 1, 1973. Exactly a year later, the CXT began to be implemented in four stages, the last being completed on July 1, 1977.

The CXT includes both specific duties and ad valorem charges on unmanufactured leaf imports. In addition, it allows duty-free shipments from EC Associates and provides a preferential tariff quota for tobacco originating from specified developing countries.

At the time of its implementation, the CXT was regarded as discriminatory toward countries exporting expensive, high-quality tobacco. Adoption of the CXT, along with the relatively high price of U.S. tobacco and the growing availability and improvement in the quality of supplies from developing countries, has been expected to adversely affect U.S. tobacco exports. And U.S. trade data for 1974-76 appear to have substantiated this prognosis.

During 1969-73, U.S. tobacco exports to the United Kingdom, Ireland, and Denmark averaged 65,222 metric tons and comprised 26 percent of total U.S. tobacco shipments during those 5 years. But in 1976, U.S. exports to these markets fell to 40,143 tons, accounting for only 15 percent of U.S. tobacco exports.

Still, a direct cause-effect relationship between the CXT and falling U.S. exports is lacking. For example, in the United Kingdom the CXT replaced a tariff structure of roughly the same level of protection. So, at least initially, the CXT caused little change there in the cost of U.S. leaf vis-a-vis its competitors. As greater amounts of imported U.S. tobacco fall in higher tariff categories, however, the effect of the CXT should become more pronounced.

Ireland poses an additional problem. The pattern of Irish imports in 1976 was altered with the phase-out of facilities designed to re-dry shipments of certain tobaccos for re-export thus reducing Ireland's actual tobacco imports.

Of the three countries, Denmark, which had no protective duty on unmanufactured tobacco prior to its accession into the EC, shows the most dramatic shifts in market shares. The U.S. market share drifted slightly upward during 1965-73, but fell from 59 percent in 1973 to 32 percent last year. Conversely, Brazil's share was relatively constant until 1973, then it began to climb steadily. In 1973, Brazil's market share was 15 percent; in 1976, it was 24 percent. The U.S. share of the U.K. tobacco market, which was 38 percent in 1976, showed no change in the downtrend that began in 1966 when the share was 95 percent. In Ireland, the U.S. market share jumped from 21 percent in 1975 to 38 percent in 1976, but otherwise showed no significant deviation from the downturn that began before the adoption of the CXT.

Denmark illustrates the CXT impact on average cost of U.S. tobacco, compared with shipments from alternative tariff areas. In 1974, the CXT raised the import price of U.S. leaf about $.08 per pound compared with imported tobacco from EC Associate Members, and an average of less than $.01 per pound compared with imported leaf from GSP supplies. Over the next 2 years, the EC tariff served to widen the cost spread between imports of U.S. leaf, and tobaccos from alternate sources. In 1976, the CXT added an average of $.15 per pound to U.S. leaf cost, compared with EC Associates, and $.03 per pound, compared with GSP countries.

By widening the differential between costs of U.S. tobacco and its competitors, the CXT has compounded the sharp rise in the absolute price of U.S. tobacco. Between 1973 and 1974, the average c.i.f. duty-paid value of U.S. leaf to Denmark rose $.36 per pound to $1.29 per pound. Of this increase, $.08 could be attributed to the CXT. Yet, it remains difficult to discern precisely how much of the sharp decline in U.S. market share is caused by the CXT or by the high price of U.S. tobacco. Other internal factors, such as taxes and health concerns, would have a major impact on tobacco trade.

Historically, U.S. tobacco has been consistently high in quality and has commanded a premium in world trade. However, the absence of a world price for unmanufactured tobacco makes it difficult to assess the magnitude of such a premium.

Another possible reason for the rapid decline of the U.S. share of Denmark's tobacco imports since 1973 could be that the CXT has had a "threshold effect," that is, has caused the price differential between U.S. and competing leaf to rise above this quality premium. Or an alternative explanation could be that the quality differential had begun to narrow in 1973 and the CXT merely augmented the decline. □

Bergland Cites U.S. Priorities, FAO Role In World Hunger Fight

Returning to a forum that he attended 4 years ago as a Congressional Adviser to the U.S. Delegation, Secretary of Agriculture Bob Bergland spoke before the 19th Session of the Food and Agriculture Organization in Rome, November 16. "The air of crisis that dominated the discussions of 4 years ago has disappeared," said Bergland in outlining U.S. response to the current overabundance of grain supplies. He cautioned, however, that "little progress has been made toward the goal of eliminating malnourishment in the poorest developing countries." Excerpts from his speech follow.

In order to review the current and intended agricultural policies of the United States Government, both domestic and international, it is important to understand our view of the current and prospective situation.

First, world grain production has exceeded consumption in each of the last 2 crop years, although it is not expected to do so this year. In any event, there is a significant increase in world carryover and a decline in prices in international markets. Thus, the air of crisis that dominated the discussions of 4 years ago has disappeared.

Second, despite the increased production, the number of malnourished people remains intolerably large, and little progress has been made toward the goal of eliminating malnourishment in the poorest developing countries.

Third, the longer run problem of inadequate growth rates of food production in the developing countries still remains the major challenge of our time. We expect FAO to play a major role in meeting that challenge.

Fourth, most of the world has had average or better weather over the past 3 crop years, and we know that this situation will not continue indefinitely. Thus, action must be taken to prepare for years in which the weather is less favorable.

We believe that these four facts set the context in which both our domestic food and agricultural policies and our role in international forums can be best understood. Let me now relate these to our recent and proposed actions.

The recent increases in carryover stocks, combined with large crops, have brought sharply lower prices on international markets for grains. Some grains are selling on world markets at or below the long-run cost of production of efficient producers. We believe that this situation if it persists will threaten the long-run production capacity of world agriculture by reducing investment incentives not only in the United States and other developed countries, but even more importantly in developing countries.

To avoid these overreactions the United States passed new domestic farm legislation designed to give producers protection against temporary imbalance in supply and demand. We believe that protecting the productive capacity of U.S. agriculture is a major factor in insuring world food security.

At the same time, the U.S. Government acted to take advantage of the current low prices and adequate supplies of grains by establishing a reserve program. In late August, the United States announced a comprehensive plan to place 30-35 million metric tons of foodgrains and feedgrains in reserve prior to the beginning of the 1978/79 marketing year. This will be held in a farmer-owned reserve-system, which will return these products to the market if there is a crop shortfall that leads to higher prices.

Our program includes creation of a special international food reserve of up to 6 million tons of wheat to insure that the United States current and special food aid commitments can be met.

We are taking active leadership in a proposed new international wheat agreement that would establish an internationally coordinated system of national reserve stocks to reduce the excessive swings in world market prices and extend world food security. We have recommended a strength-

ened food aid convention within that agreement, with provisions to insure that food aid quantities can be increased in response to unusual needs. In particular, we have advocated that donor countries should take steps to improve their capacity to maintain food aid flows during periods of high prices and to provide food aid in response to acute production shortfalls in developing countries. We strongly urge that all nations join us in our attempt to bring these discussions to a rapid and successful conclusion.

One final point regarding our domestic policy actions, which may have been inadequately understood by many other nations. In late August, the U.S. Government requested its wheat producers to reduce plantings for the 1978/79 crop. We calculate this move will result in an 8 to 10 percent actual decrease in production. This was done in the context of our view of need for a temporary adjustment in world food grain production.

We have also announced plans for a modest reduction in our feedgrain production. However, recognizing the uncertainty of world production, these plans will undergo a complete review before a final decision is made.

These actions were taken only after careful estimation that world supplies would be adequate at reasonable prices, and after insuring that reserves would be established to insure against possible crop shortfalls in the coming year.

The actions I have described are immediate initiatives designed to be consistent with the long-run needs of the world. I should like to turn now to these long-run needs and the United States view of FAO's role regarding them.

The continued need for improved nutrition and sustained higher rates of food production in most developing countries cannot be questioned. Among the key elements required to achieve these goals is a substantially higher level of investment in various aspects of agricultural production and marketing in the developing countries.

There are several aspects of this investment that deserve attention.

One aspect is the need for greater investment in the traditional infrastructure needed to improve agricultural productivity—irrigation and drainage facilities, land improvement, etc. This form of investment will require both increased external resources and increased internal efforts. Regarding the latter, the importance of adequate incentives to producers in generating such internal investment is often overlooked, and thus inadequate internal policies may well offset the effects of increased external investment flows.

A second type of investment required is sustained investment in the production of new knowledge and production techniques applicable to the conditions of individual developing countries. Similar need exists regarding better methods of harvesting, marketing, and storage necessary to reduce harvest and postharvest losses.

A third and most important type of investment needed is greater investment in farm and rural people. They must have improved health and nutrition in order to improve their well-being and productivity, and they must have greater knowledge of improved production, marketing, and other techniques.

The United States is moving actively to support these needs on several fronts.

U.S. contributions to international development lending institutions will be up more than double in 1978 compared with 1976, and much of this will be concessional monies. For example, the United States has ratified the fifth replenishment of the International Development Association (IDA), which is the World Bank's concessional lending program, and will be making an $800 million contribution to the IDA. The total IDA replenishment amounts to $7.6 billion over the next 3 years. Since IDA disburses about 30 percent of its funds for food and agricultural projects in most needy countries, this could mean some $750 million in new commitments—up from $420 million in IDA monies for agricultural development to these countries in 1976. The United States will also fully support the regional banks.

The United States has deposited the instruments of ratification of the International Fund for Agricultural Development. We anticipate that IFAD will be operational by the end of this year and will begin making disbursements for food and agricultural projects on concessional terms to food priority countries.

Our bilateral technical assistance programs will be substantially increased in 1978—about $50 million over the $536 million appropriated in 1976 and 1977. A substantial increase is earmarked for the Sahel region in Africa.

Major changes have been made in our food aid program, known as P.L. 480. Commodity commitments under Title II—the donation provisions of the Law—have been increased in favor of the most vulnerable populations of the most needy nations, thus increasing our investment in improved nutrition. In addi-

"We believe that protecting the productive capacity of U.S. agriculture is a major factor in insuring world food security."

tion, a new Title III using food development was added to encourage recipient nations to increase their agricultural development and economic programs, including nutritional programs on a long-term basis. We believe that long-term food-for-development programs can provide significant assistance in helping developing countries mobilize greater investment in several of the areas that I have mentioned.

"U.S. contributions to international development lending institutions will be up more than double in 1978 compared with 1976, and much of this will be concessional monies."

The United States is deeply interested in all these investment programs because, without adequate investment in all aspects of food and agriculture, the prospects of reducing malnutrition and meeting the food needs of most developing countries would have little chance of long-term success. Thus, the projected increases in the various U.S. investment efforts are earmarked for countries most in need.

All of these efforts recognize the need for greater food production in the developing countries. It is equally important, however, that greater incomes be generated in order that people can obtain the food once it is available. This requires programs in employment and rural development. For this reason we support the aims of the proposed Conference on Agrarian Reform and Rural Development and hope that it can be sharply focused on issues crucial to solutions of these problems.

In Manila, we told the World Food Council that the United States is moving more positively to aid the developing countries in their search for a solution to their food problems.

The programs I have just now enumerated are indications of how the United States means to back up those statements. We have turned away from policies that were too often passive and sometimes actually negative. We have established for ourselves a new set of goals, some new priorities, and a new level of commitment.

We now want to take the additional step of relating our goals on these matters to our hopes for FAO programs. We want to suggest our expectations with respect to FAO. The challenge facing us in food and agriculture is too large for any single organization to undertake. It is important that together we define and maintain a clear view of the role of FAO.

In our view, among U.N. specialized agencies the FAO should exercise the leading international role in combating hunger and malnutrition.

We believe FAO activities should be directed principally to agricultural development and the eradication of hunger in developing countries. Concern for freedom from hunger—the right to food—should become the overwhelming concern of FAO, and therefore its operations should reflect this priority. Thus, the United States is prepared to give major support to FAO in giving international leadership to:

- Efforts of international organizations and all countries to relieve hunger among the people most in need of FAO's assistance to accomplish this task;
- Facilitating the flow of developmental resources, especially in those countries most in need of assistance;
- Utilization of various development resources in ways that facilitate the access of the hungry to food.

FAO should concentrate more of its resources on food production and consumption problems of developing countries. In this process emphasis should be placed on facilitating access to food by the poor of the developing countries and particularly those in the poorest of these countries. FAO should develop policies and programs to increase food production in a way that will have a direct impact on human nutrition, improve marketing and consumption practices, and attain more equitable distribution.

Even this set of priorities will require that FAO continue to have a broad range of concerns, and we suggest that an even sharper focus be given within these programs. Our strong support for the new postharvest loss program is predicated on the assumption that it will be a definable program focused upon countries where need is greatest and prospects for significant improvements are high.

We will continue to support programs on improved land and water use, linking available technology and its users, investment planning, and nutrition monitoring and planning. The singling out of these is not meant to exclude others but to indicate our belief that the acute and growing problems of world hunger and malnutrition require that FAO redirect its programs and activities to deal with those problems.

Thus, the United States will look to other international organizations for primary leadership on certain commodity problems—organizations such as the International Wheat Council, the General Agreement on Tariffs and Trade, and the United Nations Conference on Trade and Development. We would look to still others, the World Bank and IFAD, for example, for mobilization and disbursement of financial resources that are channeled through multilateral agencies. □

USSR Improves Sugar Industry, Hopes To Cut Import Dependence

By Leslie C. Hurt

The USSR is making a major commitment to improving its sugarbeet industry with the goal of boosting beet production and hopefully reducing dependence on sugar imports.

Areas targeted for improvement and expansion include:

- Processing capacity;
- Mill efficiency;
- Research on yields and sugar content;
- Seed production;
- Producer incentives; and
- Harvesting techniques.

The USSR occupies a prominent position in the world sugar market—it is the largest producer as well as consumer. But although vast areas are devoted to sugarbeets, self-sufficiency has not been attained.

Soviet sugar outturn in 1976/77 was quite low—only 7.35 million metric tons (raw value). To satisfy the country's 11-million-ton domestic sugar requirement, the USSR purchased some 3.5 million tons of sugar from Cuba in 1977, along with 600,000 tons from the Philippines. But the 1977/78 crop is expected to improve to 9.3 million tons, and—as a result—import requirements in 1978 will be less than those of 1977.

Improved harvesting techniques used this year are resulting in a higher sugar output. The sugarbeets from this year's crop arrived at the processing plants much cleaner than during last season, as there were incentives for farmers to harvest their crops early and the weather cooperated.

The Soviets are also planning to boost total processing capacity in the country's 319 plants, which now amounts to 740,000 tons of beets per day. This capacity is expected to grow soon, as another plant is put into operation this year and 10 more by 1980.

In addition, a number of plants are expected to expand individual processing capacity. The current average daily capacity of a plant is about 2,300 tons of beets per day; by 1980 this is expected to rise to 2,500 tons. (The largest processing plant in the USSR currently has a 9,000-ton daily utilization.)

Processing plant efficiency is also expected to be increased by reducing the processing season from the current 130 days to 116.

Soviet researchers are also working on improving the sugarbeet itself, with 23 departments and laboratories working on the project. This research, which is coordinated by the All-Union Sugarbeet Institute at Kiev, is focusing on improving sugarbeet yields and sugar content, which have been relatively low owing to the shortness of the growing season and the need for more water in some areas. To facilitate this research, numerous breeding stations have been established in producing areas.

Seed variety improvement is another area on which the Soviets are concentrating. All of the sugarbeet seed used in the country is produced on State farms, where better control of technology can be obtained. Monogerm varieties, which currently account for about 75 percent of all seed used, have gained prominence. The monogerm varieties are not yielding as well as desired, but they do have the advantage of reducing thinning requirements and, as a result, production costs.

Sugarbeets are generally part of the 3- or 4-year crop rotation. A typical rotation might be winter wheat, followed by sugarbeets, barley, and possibly peas. Sunflowers also may be worked into the rotation.

The USSR is also reducing the chronic problem of the need for weeding by using more herbicides and machinery.

As part of its plan to boost production, the USSR is providing sugarbeet producers with several incentives in addition to regular payments. Bonuses are paid for overfulfillment of plan, for above-average sugar content, and for early harvesting of sugarbeets.

In many areas of the Soviet Union, producers are paid a basic amount of roughly $40 per ton of beets. The bonus for overfulfillment of plan is about 50 percent. As an incentive to harvest early, producers who harvest between September 1 and September 15 are paid a 20-percent bonus. However, the amount of beets that can be delivered to a refinery before September 15 is limited to 3-4 days worth of processing capacity. Early harvesting tends to reduce both yields and sugar content, however, as the length of the growing season is shortened.

The practice of paying bonuses for above-average sugar content was started in some areas about 4 years ago. Each year the practice has been expanded, and now includes about 276 mills, with all 178 sugarmills in the Ukraine paying bonuses if sugar content is high. There is no penalty if the sugar content falls below average.

It is a general practice to feed sugarbeet tops to cattle on the producer's farm, sometimes in the form of silage. Another practice is to sell half of the molasses produced and half of the dry beet pulp back to the growers. The remaining molasses and beet pulp can be shipped to other areas.

The prospect for the next few years of Soviet sugarbeet production is one of steady improvement. Gains in yield and sugar content will come slowly but they are being bettered. There will also be some gains as a result of further mechanization, application of herbicides and fertilizers, a slight expansion in irrigated area from the current 150,000 hectares, and continued improvement in seed varieties.

The area planted to sugarbeets will not grow substantially, with larger production to be realized through increases in yields per hectare. Nevertheless, future years will bring increases in total output, and net import requirements will probably fall below the 3-million-ton mark. □

Mr. Hurt is an agricultural economist, Sugar and Tropical Products Division, Foreign Commodity Analysis, FAS.

Uruguay's Cattle Numbers and Exports Trail '75, '76 Records

Uruguay's cattle numbers and beef exports during the first half of 1977 were significantly lower than the respective records set in 1975 and 1976. Sheep numbers were about 5 percent higher during January-June 1977 than in the previous year because of more attractive prices for wool.

Cattle numbers as of June 30, 1977, were about 10 million head, down about 4 percent from the year-earlier total and 13 percent below the peak 11.5 million head reached on June 30, 1975.

Record cattle slaughter during 1976 was just over 2 million head. Breeding programs were curtailed because of declining prices, overstocked pastures, and more attractive prices for sheep.

Beef exports during January-June 1977 totaled 84,051 tons (carcass-weight equivalent), a reduction of 55,000 tons from the 1976 volume but a level surpassed in only 1 other year—1970.

Uruguay's current policy favors domestic beef consumption over exports—a reversal of the policy in effect a year ago. There are few incentives for producers to increase their marketing of cattle in the short run.

Because of the poor prospects for exportable supplies of beef in Uruguay, some Brazilian packing plants that previously have purchased beef in Uruguay for processing and re-export will again attempt to purchase beef from Uruguay later in 1977 and early 1978 if beef supplies are at normal levels in that country.

Australia also is a possible supplier. Brazil's earlier plans to purchase 50,000 tons of boneless Argentine beef seem unlikely because of differences over sanitary regulations.

Slaughter during 1977 is expected to total about 1.7 million head, down nearly 17 percent from the 1976 level. Commercial slaughter during the first half of 1977 was 22 percent less than during the comparable 1976 period and cattle availability in the second half is relatively low.

Weather conditions have not contributed to this situation, however, although excessive rains caused a low nutrient content in pastures. Total rainfall during January-August amounted to 1,400 millimeters, compared with a total annual rainfall in a normal year of about 1,000 millimeters. The winter's cold plus excess water in the fields are causing severe stress in livestock.

The Government is keeping the price of cattle for domestic consumption at a very low level—the equivalent of an average 41 U.S. cents per kilogram (carcass-weight equivalent), or 20 cents per kilogram on the hoof. Producer prices remained fixed for mature cows and steers. A Government attempt to cull herds by freeing prices for other cattle has not yet had an effect.

Producers lack incentives to sell, and unless the price for finished cattle is freed or increased, shortages of meat for both domestic and export markets are likely over the next few months.

Beef production during 1977 is estimated at 345,000 tons or 15 percent less than last season's record.

Sheep numbers, on the other hand, were estimated at 16.5 million head as of June 30, 1977, 5 percent more than on the same date in 1976 and nearly 10 percent more than on the same date in 1975.

Because of attractive wool prices, sheep meat production during 1977 may decline from the 1976 level.

Commercial slaughter of sheep during the first half of 1977 was only 6,752 head, compared with 49,626 head during the comparable period of 1976. □

Based on dispatch from James P. Rudbeck, U.S. Agricultural Attaché, Montevideo.

Worker splitting beef carcasses at a Uruguayan meat packing plant. Uruguay's cattle producers have little incentive to sell their animals at present because of low, fixed Government prices. Unless these prices are freed or increased, shortages of meat for the domestic and export markets are likely.

PRC Official Proposes Steps for Agricultural Expansion

In a recent speech to the Standing Committee of the Fourth National People's Congress, Vice Premier Yu Chiu-li of the People's Republic of China gave the most explicit outline in recent years of the country's development policy. It seems to indicate new attempts to expand agricultural production through more efficient resource allocation and better management. In addition, the new policies could point to increased demand, stemming from higher incomes, for farm products.

In the speech, Yu first announced that wages for lower-paid workers were increased as of October 1. He then cited problems in the growth of agriculture and light industries, development of fuel and power industries, economic management, and improvement of the standard of living.

To ensure a planned, proportionate, and rapid development of China's economy, Yu proposed:

- Strengthening central planning;
- Strengthening managerial authority and accountability;
- More rapid growth of agricultural production through farm mechanization, farmland capital construction, and more support from the central Government and other economic sectors;
- Relative price adjustments and more emphasis on material incentives to increase efficiency and productivity;
- Rapid development of domestic scientific education and research as well as increased introduction of Western technology; and
- Improvement in the standard of living in both urban and rural areas.

Meanwhile, progress of the PRC's agriculture by the end of October, showed that the 1977 harvest was essentially completed with the important exception of the late rice and cotton crops. First official assessments of this harvest have been cautious. A commentary in the People's Daily of October 20 claimed that "a good harvest has been won. Grain, cotton, oil-bearing seeds, tobacco, jute, hemp and other main crops have all registered production increases over last year."

But, Yu appeared even more cautious in his October 23 speech. Noting the weather problems this year, he said only that "fairly good harvests have been gathered in many regions and the yield for cotton and oil-bearing crops is more than last year." These and other statements appear to be tentative, reflecting preliminary estimates based on incomplete provincial reports and on the expected good harvest of the late rice crop. Peking probably will not make its final assessment of the 1977 crops until the end of December.

Generally, the 1977 crops improved as the year progressed. Wheat production is forecast by the USDA Task Force on the PRC to drop from 43 million metric tons to 40 million as a result of losses from winter cold and severe drought in early spring. This setback was only partially offset by a larger harvest of spring wheat.

Rice production should exceed that of 1976, mainly because of a larger early-rice crop, a normal mid-season crop, and an expected increase in area and production of the late crop.

The important crops of miscellaneous grains in northern China should improve over 1976's outturn of 82 million tons. However, the early spring drought, localized flooding during summer, and early frost in north China may have combined to hold down the size of the expected increase.

China's total grain production this year appears to be slightly larger than last year's output.

While preliminary evaluation places production of soybeans and oil-bearing crops somewhat above last year's poor crops, a more complete assessment will have to wait for national and provincial yearend reports. The country's soybean crop is estimated at 10 million tons, just above the 9.5 million of 1976. The current forecast of China's cotton crop is 2.33 million tons, slightly below 1976's outturn of 2.35 million.

Despite recent reports of localized drought, the combination of warm temperatures, October rains, and generally adequate soil moisture in north China has created favorable conditions for overwintering crops. In addition, this fall's harvesting has been ahead of last year's in many areas. As well, winter crops have been planted on schedule and, according to the People's Daily, sowing of winter wheat in the major producing areas was completed by November 2. As a result, winter wheat and other overwintering crops are off to a much better start than last year's.

In recent weeks, world market developments raised the likelihood that if China makes significant additional purchases of grain for 1977/78 delivery, the United States may be a supplier.

As of mid-November, the PRC had bought U.S. cotton, soybeans, and soybean oil for delivery this year and U.S. trade statistics show shipments of tallow in September worth about $1 million, the largest monthly shipment of U.S. farm products to China since 1975.

The limited renewal of PRC purchases of U.S. agricultural products should be viewed against the background of greatly expanded PRC agricultural imports this year. Although a change in policy toward purchase of U.S. agricultural products cannot be ruled out, purchases that have been made appear consistent with a policy of treating the United States essentially as a residual supplier. This means that China will normally avoid purchasing U.S. agricultural products.

However, when other sources of supply are tight or uncertain and/or when the price is right, the PRC will contract for farm products of U.S. origin. The recent optional-origin purchase of U.S. soybeans and soybean oil seem to be good examples of this policy. □

By Frederic M. Surls and Charles Y. Liu, Communist Asia Group, Foreign Demand and Competition Division, Economic Research Service.

Israel Extends Drip Irrigation To Row Crops

Drip irrigation, first used in Israel in greenhouses and orchards to increase production and yields, is being extended to cotton and other row crops with beneficial results.

Israeli cotton producers employing drip irrigation during the past 9 years have found that the new technique results in increased yields in all cases where water is a limiting factor in production. Results were especially significant where less than a normal amount of irrigation water was applied.

In some instances, a 40 percent reduction in water resulted in a 21 percent decline in yields where sprinklers were used, but when the reduced quantity was applied by drip irrigation, the yield decline was only 6 percent.

Where the normal quantity of water for cotton crops was supplied by drip irrigation, yields tended to increase by 500 kilograms of seed cotton per hectare over the quantities resulting from sprinkling.

Trials for other crops also indicate substantial advantages for drip irrigation. For potatoes, higher yields and greater uniformity of size (increasing suitability for processing) were obtained.

The major problem with drip irrigation is one of economics. Costly equipment is required—filters, automatic valves, metering devices, and huge quantities of plastic pipe equipped with pressure-reducing drippers.

Israeli firms producing irrigation equipment are trying several ways to reduce costs. One is to omit special drippers and puncture the polyethylene lines at regular intervals. The minute squirts resulting from this technique do not constitute true drip irrigation, and a certain amount of puddling results. Also, the tiny punctures are prone to clogging. However, this system is much cheaper than the conventional drip lines.

Another idea of potentially greater importance is to use thin-walled pipe, remove it at the end of the growing reason, and recycle it for production of new pipe. A prototype of this type of pipe has been developed and successfully operated in the fields as a true drip system.

Clogging, which usually develops after a few months of operation, is not a factor in the use of this one-time pipe. The lines are light, and can easily be spread and collected by tractors equipped with drums connected to power take-offs.

Production of one-time pipe is not yet on a commercial basis, since there are some manufacturing problems to be solved. However, it is considered likely that this or a similar idea may revolutionize irrigated field crop and vegetable production methods. □

Based on report from Rafael N. Rosenzweig, Office of U.S. Agricultural Attaché, Tel Aviv.

Israel To Grow Record Cotton Crop

Israel, one of the world's smaller cotton producers, obtains some of the world's highest yields per hectare. This year, as a result of larger planted area and benefiting from generally favorable weather, production is expected to reach a record level.

Israel switched from net-importer status to being a net cotton exporter in 1966. Exports are expected to reach a record in 1977/78 and will account for about 62 percent of the crop.

The 1977 cotton harvest is expected to amount to about 65,000 metric tons (300,000 bales) from about

Based on dispatch from Roger Puterbaugh, U.S. Agricultural Attaché, Tel Aviv.

From left: Trial drip irrigation setup for cotton; drip lines leading from plastic main; and irrigation head for drip main, consisting of filter, water meter, and automatic shutoff valve. Israel first used drip irrigation in orchards and greenhouses, and is now extending the method to cotton and other row crops.

54,000 hectares, compared with 53,700 tons (247,000 bales) from 43,000 hectares in 1976. Most of the additional area previously was planted to wheat.

Exports—mainly to Portugal, Italy, and Greece—this year are forecast at 40,000 tons (185,000 bales)—up sharply from 1976's 30,000 tons (137,000 bales). Domestic consumption is expected to remain at or near the 1976 level of about 24,000 tons (110,000 bales).

New production techniques, including drip irrigation and double-cropping cotton with wheat are being used, but thus far there is no economic significance to these innovations.

Excellent soil moisture in most parts of Israel prevailed during the cotton planting season, and as a result unirrigated cotton is expected to yield more than the usual 50 percent of the irrigated crop.

Some of the water needed for additional production came from new storm-water catchments or from treated sewage. In certain areas, saline water (chlorine content of up to 1,200 parts per million) was utilized.

The cotton aphid problem has worsened, and in August per unit of area spraying had increased by about 30 percent over the already high level of 1976.

Pima variety cotton, which accounted for 2,000 hectares in 1977/78, has been attacked by fusarium wilt. The Ministry of Agriculture restricted pima plantings in 1977/78 and has ruled that plantings of pima will be prohibited in 1978/79. This would mean that Israel would have to import up to 1,000 tons of extra-long staple cotton.

Prices received for the 1976 crop were more than 50 percent above 1975 levels, reflecting both the international market and the declining value of the Israeli pound. In real terms, returns in domestic currency were higher by more than 25 percent.

The permanence of the large 1977 area will depend mainly on continued good returns. Most of the 1977 crop destined for export was sold at prices substantially above current world market levels. The Cotton Marketing Board reported average sales prices equal to 72 U.S. cents per pound, base SM 1 1/16. □

Continued from page 6

Japan Fishing

tons of poultry a year and is in a position to boost output.

Expansion of domestic livestock production is limited, however, by its impact on the environment. Already, pollution problems have caused movement of livestock producing units from populated areas—a trend that cannot be continued indefinitely given the country's limited land area.

Also, since domestic production of feedstuffs for these industries is negligible, any growth in feed requirements would generate growth in imports of feedgrains, oilseeds, and other feedstuffs. About 60 percent of these ingredients normally comes from the United States, which last year shipped $2 billion worth of feedgrains, soybeans, and soybean meal to Japan.

Tight fish supplies will also have an impact on the future composition of feed used in hog and poultry rations.

Fishmeal has long been an important ingredient in mixed feed production, principally as a protein source in poultry and hog rations. In 1976, 615,045 tons of fishmeal were used in mixed feed production, or about 3.3 percent of the total.

One study by the Boston Consulting Group in Tokyo shows that a 27 percent boost in soybean meal's use might be needed if fishmeal's weight contribution in poultry and hog rations were reduced by 50 percent. This comes to about 500,000 additional tons of soybean meal, or similar amounts of other high-protein feeds, which would have to be obtained from foreign sources—most likely the United States. □

Foreign Agriculture

Vol. XV No. 48 Nov. 28, 1977

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The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of this Department. Use of funds for printing *Foreign Agriculture* has been approved by the Director, Office of Management and Budget, through June 30, 1979. Yearly subscription rate: $34.35 domestic, $42.95 foreign; single copies 70 cents. Order from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Contents of this magazine may be reprinted freely. Use of commercial and trade names does not imply approval or constitute endorsement by USDA or Foreign Agricultural Service.

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Two Japanese Teams Visit U.S.

Two top-level trade teams from Japan—the leading market for U.S. wheat exports—recently visited the United States and conferred with their counterparts here about 1977/78 wheat trade prospects.

One group, the Japanese Wheat Mission, traveled throughout the United States, including a stopover in Washington, D.C., and talked with Government, trade, and producer representatives to gain a better perspective of the U.S. wheat industry. The mission was the 15th Japanese Government team to visit the United States as part of Wheat Associates USA activities.

The other group consisted of about 300 Japanese bakery executives and allied industry representatives, who attended the "Bakers Expo '77," held in early October in Atlantic City. The Japanese group was one of the largest foreign delegations to visit the exposition that featured bakery equipment. Annual sales of bakery products in Japan are estimated at about $3.7 billion—and the team that attended the show accounts for almost half this total. In the just-ended 1976/77 fiscal year, U.S. wheat exports to Japan were about 3.4 million metric tons, valued at around $400 million.

Elsewhere, the Tokyo office of Wheat Associates reports that samples of the 1977 U.S. wheat crop have arrived in Japan for testing by the Japanese Flour Millers Association. Separate samples were provided to give Japanese millers the chance to analyze wheat from each U.S. production area.

Meanwhile, opposition in Japan is growing to the Government proposal to blend rice flour with wheat flour in an effort to expand rice consumption. Some bakers and noodle manufacturers contend that the blending is uneconomical and will result in lower quality end products. But the Government remains firm in its position that the proposal must be considered as a means to meet the rapidly expanding carryover of rice stocks. Wheat Associates considers the outcome of this issue as a key factor in the size of Japan's wheat import requirements. □

World Cocoa Bean Output Up From 1976/77 Level

World cocoa bean production for 1977-78 (Oct.-Sept.) is forecast at 1.47 million tons, up 8 percent from the disappointing 1976/77 harvest of 1.36 million tons, which was the lowest outturn since the 1968/69 season.

Harvesting of the West African main crops will begin several weeks later than normal this fall because of dry weather earlier in the year. However, it is likely that this first forecast of the 1977/78 world crop will not vary more than 5.5 percent from the actual final outturn.

Production forecasts for the major producing countries, with 1976/77 data in parentheses (in thousand tons), are as follows: Ghana, 340 (325); Ivory Coast, 250 (235); Nigeria, 200 (165); Cameroon, 95 (82); Brazil, 250 (234); Ecuador, 70 (69); Dominican Republic, 35 (34); Mexico, 34 (34); Colombia, 31 (28); Papua New Guinea, 31 (30); and Malaysia, 22 (20). □

International Meetings—December

Date	*Organization and Location*
1	FAO Conference, concluding session, Rome.
2	FAO Council, Rome.
1,2	International Wheat Council and Food Aid Committee, concluding sessions, London.
1,2	U.S.-USSR Working Groups, Economic Research and Information, Moscow.
5-8	Working Party on Agricultural Policies, Organization for Economic Cooperation and Development, Paris.
5-9	FAO Intergovernmental Group on Meat, Rome.
6,7	U.S.-USSR Committee on Cooperation in Agriculture, Moscow
12-16	UNCTAD Preparatory Meeting on Meat, Geneva.
19-22	UNCTAD Intergovernmental Working Group (export level) on Jute and Products, Geneva.